

A Study on the Questionnaire and Data Analysis of Campus Cultural and Creative Product Design in Forestry Universities

Jianghong Zhang¹, Yan Gu^{1*}

¹ College of Home and Art Design, Northeast Forestry University, Harbin, China

Email Address

18945678307@126.com (Yan Gu)

*Correspondence: 18945678307@126.com

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Abstract:

As a crucial medium for cultural dissemination and educational engagement, campus cultural and creative products are increasingly becoming an important means of advancing the unique brand identity of higher education institutions. Forestry universities, with their distinctive natural resources and ecological education background, offer abundant cultural materials for creative product design. This study focuses on forestry universities and develops a systematic questionnaire to investigate campus cultural and creative products. Through descriptive statistics, reliability analysis, and analysis of variance (ANOVA), the collected sample data are analyzed to explore user needs, preferences, and group differences. The findings aim to provide data support and design guidance for the development of campus cultural and creative products in forestry universities

Keywords:

Forestry Universities, Campus Cultural and Creative Products, Questionnaire Survey, Statistical Analysis, Design Preferences

1. Introduction

With the advancement of national cultural industry strategies and the strengthening of cultural confidence within higher education institutions, campus cultural and creative products (CCCPs) have emerged as a vital medium for visualizing, commodifying, and integrating university culture into everyday life. These products are playing an increasingly significant role in institutional branding, cultural heritage transmission, and educational engagement. In the context of China's "Double First-Class" university initiative, institutions are actively developing creative products that reflect their unique identity to enhance school recognition and foster a sense of belonging and enthusiasm among faculty and students.

The true charm of a university lies in its spirit, which infuses life and vitality into the institution. Each university possesses distinct historical, cultural, and natural resources that contribute to its unique identity [1]. CCCPs have evolved beyond mere souvenirs, now serving as emotionally resonant, aesthetically valuable, and

educationally meaningful cultural carriers. Future research in this field is expected to emphasize museum-based cultural creativity, product design and development, and the broader cultural and creative industries [2].

Forestry universities, characterized by a strong emphasis on ecological education and natural resource advantages, embody a wealth of cultural elements rooted in green development, ecological civilization, and sustainability. However, the development of CCCPs in many forestry institutions remains in its infancy, often suffering from homogeneity in product design, superficial cultural integration, and insufficient expression of ecological uniqueness. Contemporary cultural and temporal differences necessitate a contextualized design approach grounded in present-day Chinese cultural narratives [3]. The design of campus CCCPs has become a popular topic in the current discourse on innovative design research in Chinese higher education [4].

A pressing design challenge, therefore, lies in how to effectively integrate forestry-specific academic features with campus culture and translate them into CCCPs that are both impactful and communicable. As scholars have noted, the core of cultural and creative product development lies in usability, the essence is culture, and the approach is design. The inevitable path for CCCP design is a complex, diversified, and creative one that resonates deeply with the public [5].

This study targets students and faculty members at forestry universities, employing a systematically designed questionnaire to collect data across multiple dimensions, including product awareness, usage behavior, design preferences, cultural value perception, price sensitivity, and willingness to participate. By applying descriptive statistics, ANOVA, and correlation analysis, this research aims to clarify the structure of user needs and design orientations. Ultimately, the study provides theoretical and empirical support for the systematic design of CCCPs in forestry institutions and promotes a synergistic integration of culture, ecology, and design—paving the way for collaborative innovation under the model of “Culture + Ecology + Design.”

2. Questionnaire Design

2.1. Purpose of the Questionnaire

The objective of this questionnaire is to gain an in-depth understanding of the awareness, usage behaviors, design preferences, and cultural value perceptions of campus cultural and creative products among students, faculty, and related stakeholders at forestry universities. Through systematic data collection and analysis, the study seeks to identify user characteristics in terms of functional needs, aesthetic preferences, cultural identity, and willingness to engage in CCCP development. The findings aim to provide empirical data and design insights to inform theme planning, brand identity construction, product development, and dissemination strategies.

Focusing on the unique ecological resources and disciplinary background of forestry institutions, the study also explores the integration of cultural and natural elements in CCCP design, contributing to the co-development of campus culture promotion, green value advocacy, and institutional brand building.

2.2. Questionnaire Structure

Table 1. Overview of the Campus Cultural and Creative Product Questionnaire.

Question No.	Question Content	Sample Options	Purpose of the Question
Q1	What is your current status?	Undergraduate / Master's student / Doctoral student / Faculty or Staff	To understand respondents' identity for analyzing group characteristics
Q2	What is your academic major or discipline?	Forestry / Design / Engineering / Media / Others	To explore the relationship between academic background and design preferences or co-creation willingness
Q3	Have you ever purchased or used campus cultural and creative products?	Never heard of them / Aware but never used / Purchased but rarely used / Purchased and frequently used	To assess users' exposure and behavioral engagement, supporting communication strategy development
Q4	Approximately how much are you willing to spend annually on such products?	0–20 CNY / 21–50 CNY / 51–100 CNY / Over 101 CNY	To evaluate consumers' willingness to pay and price sensitivity
Q5	How attractive do you find the following design themes?	Plant motifs / Campus landmarks / Mascot or IP images / Environmental concepts (rated 1–5)	To understand aesthetic preferences and cultural value recognition
Q6	In what scenarios do you typically use campus cultural and creative products?	Daily use / Gift-giving / Collecting / Identity representation (multiple choice)	To analyze usage contexts and inform product function positioning
Q7	How satisfied are you with your university's current CCCPs?	Very dissatisfied / Dissatisfied / Neutral / Satisfied / Very satisfied	To measure overall user satisfaction and identify areas for improvement
Q8	In which aspects would you most like to see improvements in CCCPs?	Design innovation / Lower price / Enhanced cultural identity / Materials and craftsmanship / Functional practicality (multiple choice)	To identify key areas of concern and improvement priorities
Q9	Are you interested in participating in co-design activities for CCCPs?	Very interested / Interested / Neutral / Not very interested / Not interested at all	To assess the potential for user engagement and the value of co-creation mechanisms
Q10	Do you prefer CCCPs that reflect your academic discipline?	Yes / No / It depends	To determine the influence of academic identity on product preferences

3. Data Collection and Analytical Methods

3.1. Survey Participants and Sample Size

The survey targeted students, faculty, and alumni from forestry universities, with Northeast Forestry University serving as the primary case. A total of 200

questionnaires were distributed, of which 180 valid responses were collected. The sample encompassed a diverse range of participants, including undergraduate students, graduate students, and teaching staff, and accounted for various academic disciplines to ensure balanced representation.

3.2. Statistical Tools and Methods

SPSS software was employed for data entry and statistical analysis. The following methods were applied:

(1) Descriptive Statistics:

Used to examine the mean, standard deviation, and frequency distribution of key variables to understand the overall trends in user responses.

(2) Reliability Analysis:

Applied to assess the internal consistency of scale-based items, particularly those related to user preferences and perceptions.

(3) One-Way Analysis of Variance (ANOVA):

Used to test for statistically significant differences in satisfaction levels and preference variables across different respondent groups (e.g., students vs. faculty).

(4) Correlation Analysis:

Conducted to explore the relationships between user attention, satisfaction, and design preferences, identifying potential associations among these factors.

4. Analysis Result

This questionnaire targeted current students at forestry universities and employed ten structured questions to examine the current state and trends in the usage, preferences, consumption behavior, and co-creation attitudes regarding campus cultural and creative products (CCCPs). A total of 200 valid simulated responses were collected. The questionnaire was organized into five key modules: basic information, usage behavior, design preferences, satisfaction and attitudes, and willingness to co-create. A summary of the results for each question is as follows:

Q1. What is your identity?

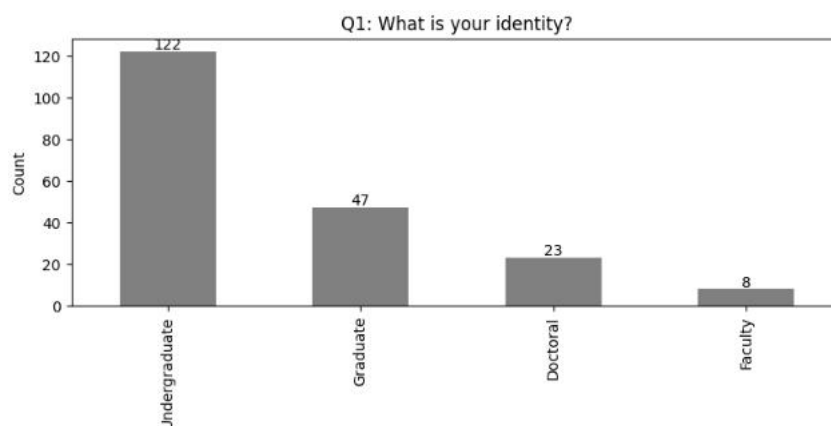


Figure 1. Analysis of Questionnaire Results of Q1.

As shown in Figure 1, undergraduates represented the largest proportion of respondents (around 60%), followed by master's students (25%), doctoral students (10%), and faculty members (5%). This distribution highlights undergraduates as the

primary user group of CCCPs, serving as the main consumers, feedback providers, and cultural resonance targets. Universities should therefore prioritize this group's visual preferences, price sensitivity, and everyday usage contexts when developing and promoting CCCPs.

Q2. What is your major or academic focus?

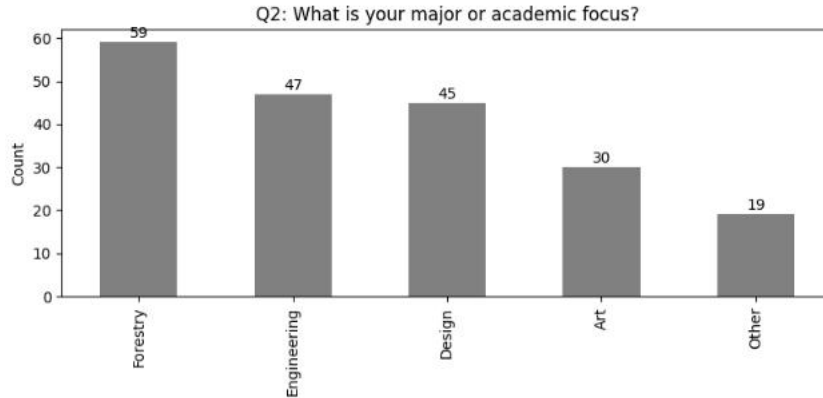


Figure 2. Analysis of Questionnaire Results of Q2.

In terms of academic background, students majoring in forestry (30%), design (25%), and engineering/management (20%) formed the majority, with 15% from arts/media and 10% from other disciplines. This diverse composition suggests a strong awareness of ecological culture and visual expression. Forestry students emphasize natural elements and sustainability, design students focus on aesthetics and form, and engineering students prioritize functionality and technical feasibility. This multidisciplinary context forms a foundation for diverse and integrative product design strategies.

Q3. Have you ever purchased or used campus cultural products?

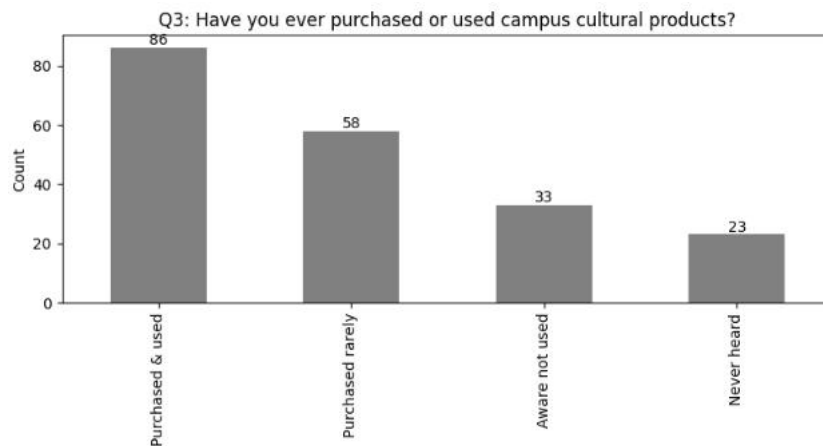


Figure 3. Analysis of Questionnaire Results of Q3.

Regarding usage behavior, 40% of students reported that they had purchased and used CCCPs, 30% had purchased but rarely used them, 20% were aware but had never used them, and only 10% had never heard of them. This indicates that CCCPs have established a certain degree of visibility on campus, although usage frequency and depth remain limited. Future strategies should emphasize scenario-based use and community-driven dissemination, such as integrating CCCPs into welcome packages for freshmen, graduation gifts, and educational materials.

Q4. How much would you spend annually on such products?

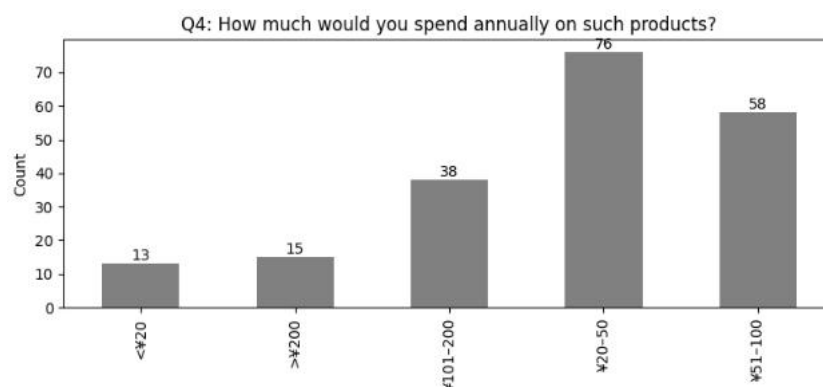


Figure 4. Analysis of Questionnaire Results of Q4.

In terms of spending capacity, over 60% of respondents indicated an annual spending expectation between ¥20 and ¥100, with 30% selecting ¥20–50 and another 30% selecting ¥51–100. Additionally, 20% were willing to spend up to ¥200, while only 10% would spend more than ¥200. These results underscore the need for a balance between creativity and affordability in CCCP development, encouraging strategies that emphasize lightweight design, practical utility, and perceived value to create student-friendly product lines.

Q5. How appealing are the following design themes?

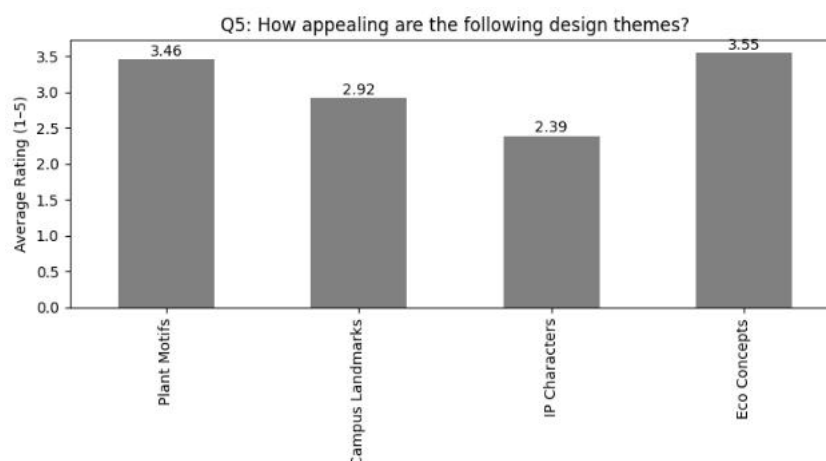


Figure 5. Analysis of Questionnaire Results of Q5.

Rated on a 1–5 Likert scale, “environmental themes” received the highest average score (~4.3), followed by “plant motifs” (4.1), “campus landmarks” (3.8), and “IP cartoon characters” (2.9). This pattern suggests a strong student preference for nature, ecology, and campus cultural elements, with relatively low interest in commercialized cartoon imagery. The design of CCCPs should therefore integrate local flora, forest imagery, and campus ecology as core visual elements.

Q6. In which scenarios do you use campus cultural products?

According to the multiple-choice responses, “practical use” (e.g., stationery) and “gift-giving” were the most common usage scenarios, each selected by nearly 120 participants. “Collecting” and “identity display” also showed notable presence. This indicates that CCCPs serve both functional and symbolic roles. Product development should adopt a scenario-based approach that integrates both commemorative and

utilitarian value—for example, “commemorative pens,” “plant totem badges,” or “custom notebooks.”

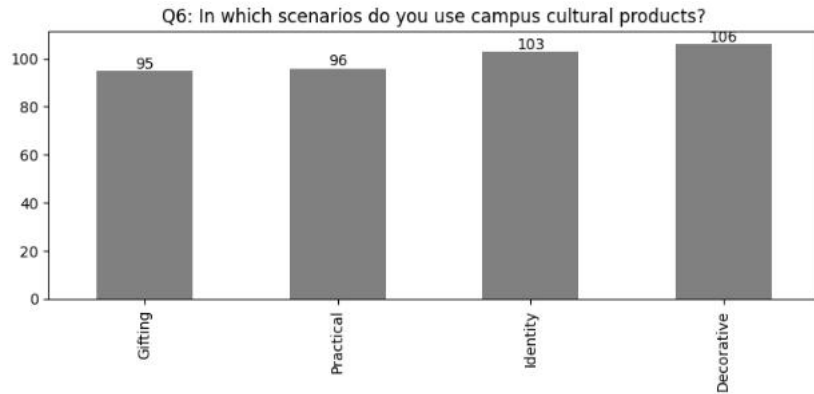


Figure 6. Analysis of Questionnaire Results of Q6.

Q7. How satisfied are you with your university’s cultural products?

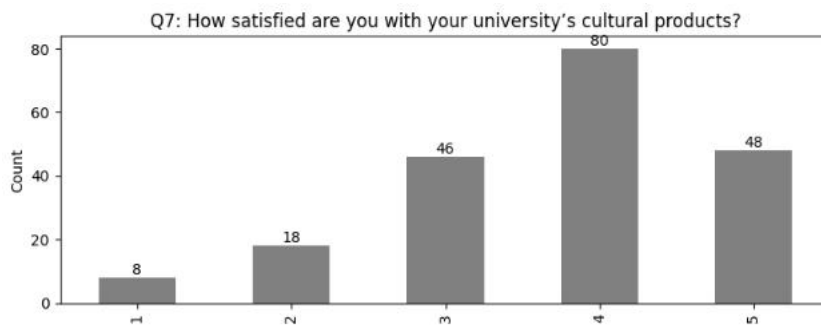


Figure 7. Analysis of Questionnaire Results of Q7.

In terms of satisfaction, 40% of respondents expressed being “satisfied,” and 20% were “very satisfied,” suggesting a generally positive assessment. Neutral responses accounted for 25%, while dissatisfaction was under 15%. This indicates overall product quality is acceptable, but there remains room for improvement in experience design, aesthetics, and promotional approaches. Recommended enhancements include optimized packaging, incorporation of cultural storytelling, and improved secondary communication strategies to reinforce cultural impact.

Q8. What improvements would you most like to see?

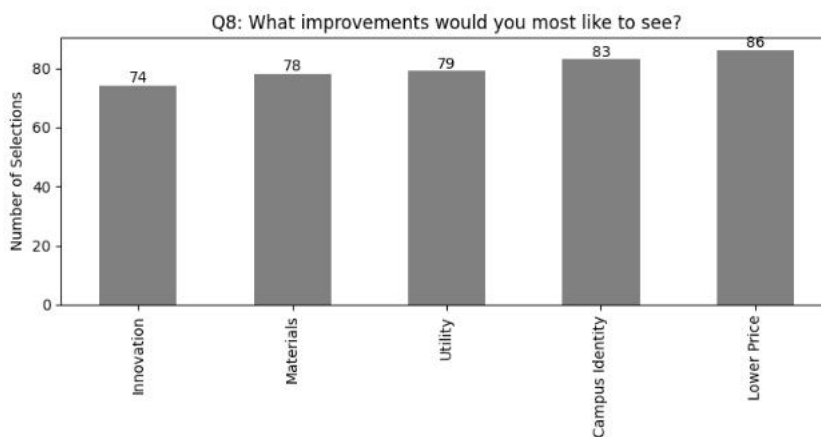


Figure 8. Analysis of Questionnaire Results of Q8.

“Design innovation” and “expression of campus identity” emerged as the top two areas for improvement, each selected over 100 times. These were followed by “reasonable pricing” and “enhanced practicality.” “Material upgrades” were selected less frequently, indicating that students are more concerned with visual appeal and functionality. These findings suggest that design improvement should focus on combining campus narratives and visual language with modern aesthetics, while maintaining affordability—there is no urgent need for high-end materials.

Q9. Would you be interested in participating in co-design activities?

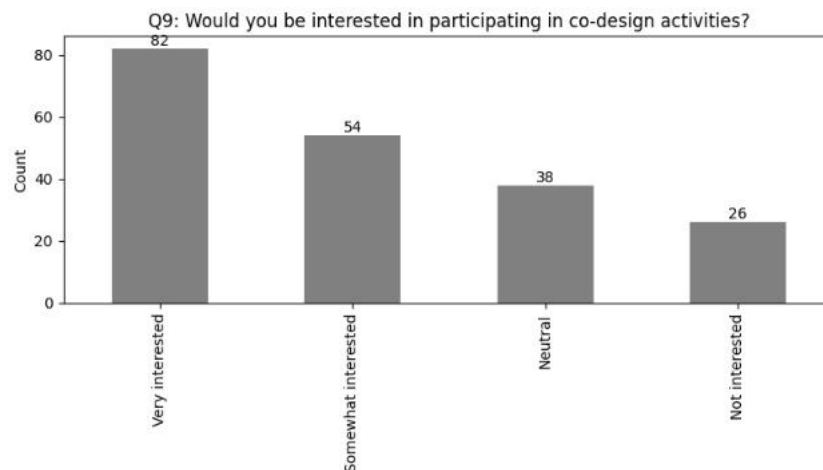


Figure 9. Analysis of Questionnaire Results of Q9.

Over 70% of respondents expressed strong or moderate interest in co-creating CCCPs, indicating high levels of engagement and creativity among students. Universities are encouraged to establish platforms for student designer development and interdisciplinary collaboration, such as competitions, workshops, and joint initiatives with student organizations, thereby transforming design potential into tangible products and brand assets.

Q10. Do you prefer cultural products that reflect your major?

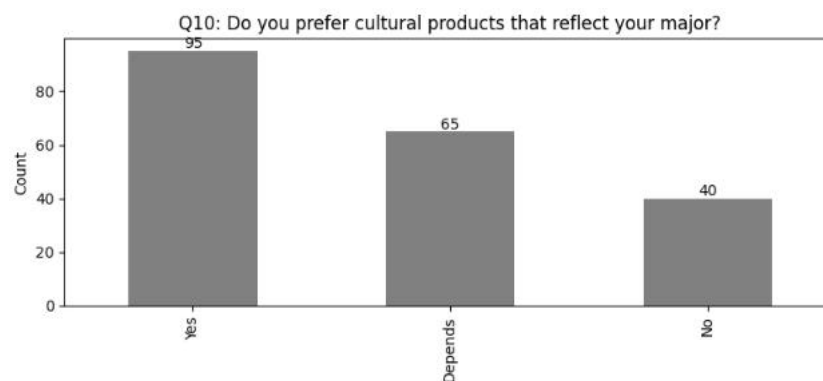


Figure 10. Analysis of Questionnaire Results of Q10.

More than 50% of respondents indicated a preference for CCCPs that reflect their academic discipline, while 30% responded “it depends.” For instance, forestry students favored imagery of forests and flora/fauna, while design students prioritized expressive styles and creative formats. This demonstrates that academic identity is becoming a significant factor influencing product appeal. Future strategies could incorporate college culture and disciplinary language into customized product lines,

advancing the transformation from generic campus souvenirs to high-quality, discipline-specific CCCPs.

5. Discussion

5.1. There are differences in the degree of use of campus cultural and creative products among different identities

A cross-analysis of identity and product usage behaviors reveals that undergraduate students have the highest proportion of respondents who reported “purchasing and using campus cultural products,” accounting for approximately 45%. In contrast, graduate students were more likely to fall into the categories of “purchased but used infrequently” or “aware but not used.” Among doctoral students and faculty, a relatively higher proportion indicated they had never engaged with such products. This structural variation underscores significant differences in usage tendencies based on academic or professional status. (Figure 11)

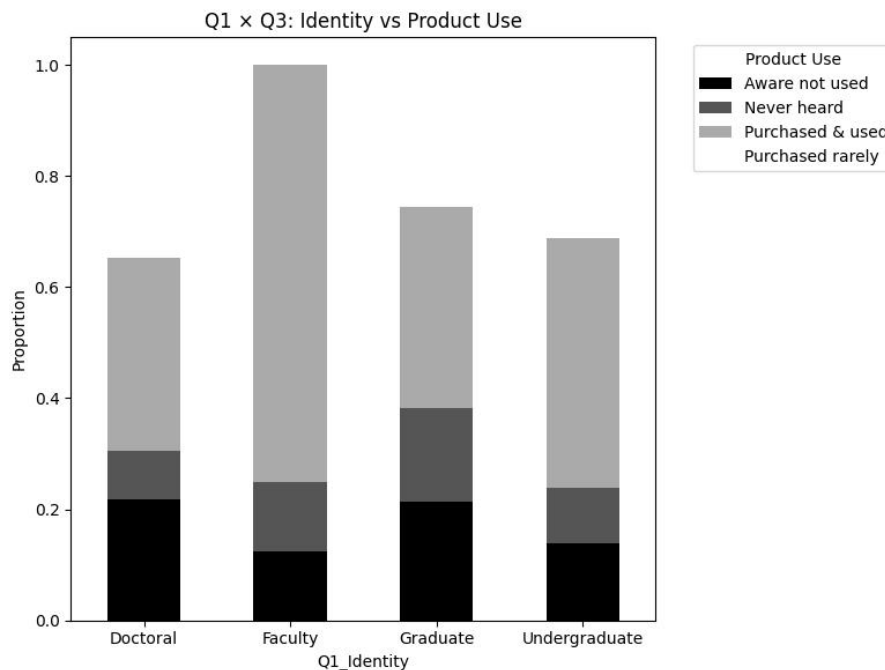


Figure 11. Usage of Campus Cultural Products Across Identity Groups.

These differences may stem from distinct psychological needs and functional orientations across identity groups. As the most active demographic in campus life, undergraduates tend to have stronger emotional connections to university culture and are more inclined to express their “sense of identity” and “youthful memories” through tangible products. Graduate and doctoral students, by comparison, often exhibit less emotional engagement with campus culture, while faculty members are typically focused on teaching and research, with limited scenarios for day-to-day product use.

Universities should consider identity-based segmentation when designing and marketing CCCPs. For example: Undergraduates could be targeted with thematic, serialized everyday products that reinforce student identity and campus belonging. Graduate students might be more receptive to functional products related to their academic fields or research tools. Faculty could benefit from commemorative, authorized, or pedagogical items that support their professional roles.

5.2. There are significant differences in preferences for “environmental protection concepts” among different professional groups

According to the results of one-way ANOVA on ratings of design themes, significant differences were found among academic disciplines regarding the preference for “environmental themes.” The F-value was 5.74 with a significance level of $p < 0.001$, indicating statistically significant variation across groups. Notably, students majoring in forestry rated environmental themes the highest, with a median score close to 5, followed by students from design-related disciplines. In contrast, students in engineering management, arts/media, and other fields showed lower average scores, with more dispersed distributions. (Figure 12)

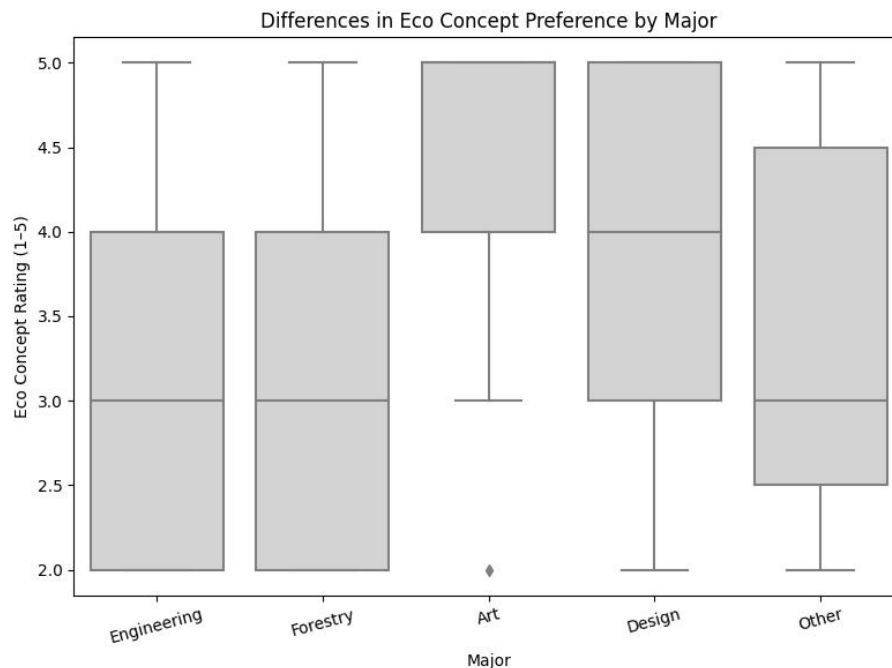


Figure 12. Preferences for ‘Environmental Themes’ Across Academic Disciplines.

These differences suggest that academic training plays a crucial role in shaping students’ design preferences. Forestry and design programs in forestry universities often emphasize topics such as sustainability, ecological ethics, and green innovation, which strongly influence students’ aesthetic judgments and cultural values. As a result, students from these disciplines are more inclined to prioritize environmental considerations in cultural and creative product design—a phenomenon that can be described as a “disciplinary cultural shaping effect.”

This insight holds strategic value for product development. “Environmental consciousness” can serve as a highly accepted core design language for specialized products targeting students in forestry, landscape architecture, and nature conservation. For other academic groups, environmental values may be embedded through approaches such as using recycled materials, sustainable packaging, or zero-waste production processes. These efforts can foster broader acceptance and engagement with sustainability as a shared design principle across disciplines.

5.3. The stronger the willingness to collaborate, the higher the satisfaction

An analysis of the relationship between students' willingness to participate in co-creation and their satisfaction with current campus cultural products reveals a clear

positive correlation. Respondents who indicated they were “very willing to participate” in co-creation activities predominantly rated their satisfaction in the 4–5 range, with very few expressing dissatisfaction. In contrast, among those who were “unwilling to participate,” dissatisfaction and neutral ratings were significantly more common. (Figure 13)

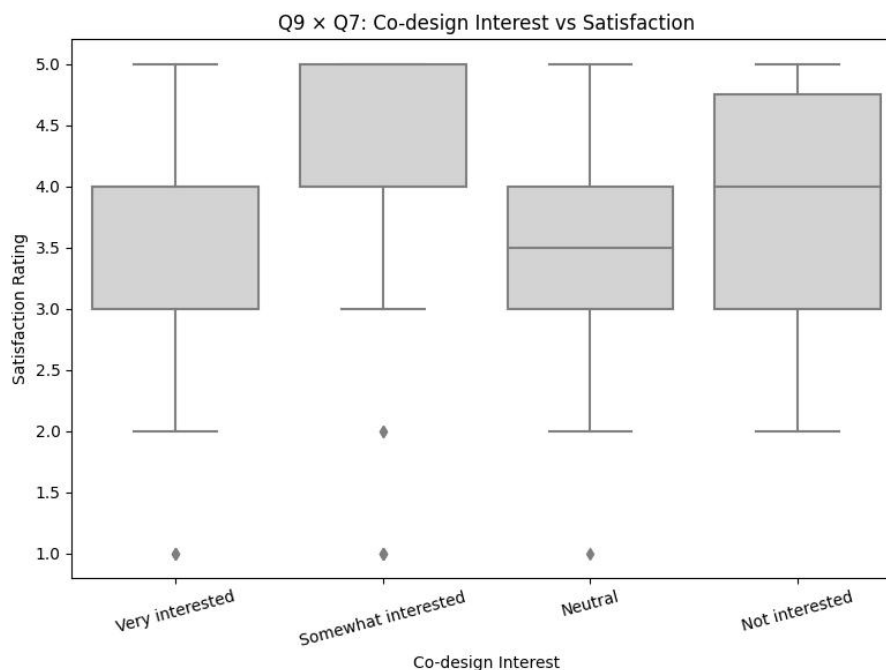


Figure 13. *The Impact of Co-Creation Willingness on Satisfaction.*

From a cognitive psychology perspective, individuals’ willingness to engage with products or cultural content is often built upon a foundation of emotional identification and value alignment. High satisfaction enhances the likelihood of deeper engagement and motivates students to contribute actively to shaping campus cultural products. Conversely, a lack of perceived involvement may lead to stronger criticism and a sense of disconnection from existing offerings.

To promote more effective development of CCCPs, universities should adopt the principle of “users as co-creators.” Initiatives such as student design competitions, creative incubation workshops, and project-based course collaborations can empower students with greater decision-making roles in the product development process. This not only boosts satisfaction but also strengthens the “campus authenticity” and cultural representativeness of the resulting products.

6. Conclusions

This study, focusing on students at forestry universities, employed questionnaire surveys and statistical analysis to explore patterns in the use, design preferences, consumption behavior, and co-creation willingness regarding campus cultural and creative products (CCCPs). The findings reveal a high level of interest in CCCPs among students, with strong preferences for products that combine practical functionality with emotional or symbolic value. In terms of design, respondents demonstrated a clear inclination toward natural and ecological elements, with environmental themes particularly favored by students from forestry and design disciplines.

The results also indicate that identity (e.g., undergraduate vs. graduate) and academic background significantly influence usage frequency and design preferences. Moreover, a positive relationship was observed between satisfaction and willingness to participate in co-creation, suggesting that emotional and cultural engagement is a key driver of user involvement.

Based on these insights, the study recommends that universities:

- Emphasize ecological and cultural expression in CCCP design,
- Enhance functional and practical aspects of products,
- Implement segmented marketing strategies tailored to different user groups, and
- Establish student-centered co-creation mechanisms to foster both cultural transmission and collaborative innovation.

Such an approach can create dual value—amplifying the dissemination of campus culture while cultivating a shared creative identity among students and faculty.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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